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5.0 MEPA Notice of Project Change

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Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA
Office

NPC

For Office Use Only Executive Office of Environmental Affairs MEPA Analyst: <i>Brendy Angus</i> Phone: 617-626- <i>1029</i>
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Notice of Project Change

The information requested on this form must be completed to begin MEPA Review of a NPC in accordance with the provisions of the Massachusetts Environmental Policy Act and its implementing regulations (see 301 CMR 11.10(1)).

Project Name: Muddy River Flood Control, Water Quality & Habitat Enhancement & Historic Preservation Project¹		EOEA #: 11865
Street: Muddy River between the Riverway and Avenue Louis Pasteur		
Municipality: Boston	Watershed: Muddy River	
Universal Transverse Mercator Coordinates: X: 326550 Y: 4689995	Latitude: 71° 6' 25" Longitude: 42° 20' 40"	
Status of project construction: 0 %complete		
Proponent: City of Boston Department of Parks & Recreation		
Street: 1010 Massachusetts Avenue		
Municipality: Boston	State: MA	Zip Code: 02218
Name of Contact Person From Whom Copies of this NPC May Be Obtained: Margaret Dyson		
Firm/Agency: Boston Parks & Recreation	Street: 1010 Massachusetts Avenue	
Municipality: Boston	State: MA	Zip Code: 02218
Phone: (617) 961-3028	Fax: (617) 635-3256	E-mail: mdyson@cityofboston.g

In 25 words or less, what is the project change? **Modification on the type of flow conveyance structures, the size of the structures, the footprint occupied by the structures and elimination of a surface roadway.**
See full project change description beginning on page 3.

Date of ENF filing or publication in the Environmental Monitor: **February 10, 1999**

¹ This NPC addresses the Phase 1 project located between the Riverway and Avenue Louis Pasteur.

Was an EIR required? Yes No; if yes,
 was a Draft EIR filed? Yes (Date: **January 21, 2001**) No
 was a Final EIR filed? Yes (Date: **February 3, 2003**) No
 was a Single EIR filed? Yes (Date:) No
 Supplemental EIR filed February 15, 2005

Have other NPCs been filed? Yes (Date(s):) No
 8/22/01 Back Bay Yard Sewer Separation
 9/25/01 Plant Material Removal and Planting Agassiz Bridge

If this is a NPC solely for lapse of time (see 301 CMR 11.10(2)) proceed directly to
 "ATTACHMENTS & SIGNATURES" on page 4.

PERMITS / FINANCIAL ASSISTANCE / LAND TRANSFER

List or describe all new or modified state permits, financial assistance, or land transfers not previously reviewed:

N/A

Are you requesting a finding that this project change is insignificant? (see 301 CMR 11.10(6)) Yes No; if yes, attach justification.

Under 301 CMR 11.10 (6)(a), this change impacts less than 10% of the project area, which extends from Wards Pond to the Charles River.

Under 301 CMR 11.10 (6)(b), this change will not generate impacts beyond those identified in earlier filings.

Paragraphs 301 CMR 11.10 (6)(c) through (g) are not applicable to this NPC.

Are you requesting that a Scope in a previously issued Certificate be rescinded?
 Yes No; if yes, attach the Certificate

Are you requesting a change to a Scope in a previously issued Certificate? Yes
 No; if yes, attach Certificate and describe the change you are requesting:

Summary of Project Size & Environmental Impacts	Previously reviewed	Net Change	Currently Proposed
LAND			
Total site acreage*	XXXX	XXXX	9.5
Acres of land altered	XXXX	no change	
Acres of impervious area	XXXX	-.25	XXXX
Square feet of bordering vegetated wetlands alteration	XXXX	no change	XXXX
Square feet of other wetland alteration	XXXX	no change	XXXX

Acres of non-water dependent use of tidelands or waterways	N/A	N/A	N/A
STRUCTURES			
Gross square footage	XXXX	-4200	XXXX
Number of housing units	N/A	N/A	N/A
Maximum height (in feet)	N/A	N/A	N/A
TRANSPORTATION			
Vehicle trips per day	N/A	N/A	
Parking spaces	N/A	N/A	N/A
WATER/WASTEWATER			
Gallons/day (GPD) of water use	N/A	N/A	N/A
GPD water withdrawal	N/A	N/A	N/A
GPD wastewater generation/ treatment	N/A	N/A	N/A
Length of water/sewer mains (in miles)	N/A	N/A	N/A

Does the project change involve any new or modified:

1. conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97? Yes No
2. release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction? Yes No
3. impacts on Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities? Yes No
4. impact on any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?
 Yes No; if yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? Yes No
5. impact upon an Area of Critical Environmental Concern? Yes No

If you answered 'Yes' to any of these 5 questions, explain below:

#4 The project is in the Emerald Necklace Park System which is listed on the National Register of Historic Places.

PROJECT CHANGE DESCRIPTION (attach additional pages as necessary). The project change description should include:

- (a) a brief description of the project as most recently reviewed
- (b) a description of material changes to the project as previously reviewed,
- (c) the significance of the proposed changes, with specific reference to the factors listed 301 CMR 11.10(6), and
- (d) measures that the project is taking to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts. If the change will

involve modification of any previously issued Section 61 Finding, include a proposed modification of the Section 61 Finding (or it will be required in a Supplemental EIR).

Project Description

(a) Muddy River Flood Control, Water Quality & Habitat Enhancement & Historic Preservation Project Description as Previously Reviewed

The Muddy River Flood Control, Water Quality & Habitat Enhancement & Historic Preservation Project (MRP) is a comprehensive project that addressed issues related to flooding, water quality, habitat enhancement, historic preservation and sediment control. A subsection of the MRP is a flood damage reduction project that is being designed and implemented in partnership with the US Army Corps of Engineers (Corps). Joining in partnership with the Corps is the Commonwealth of Massachusetts (State), the City of Boston (Boston) and the Town of Brookline (Brookline) who collectively are referred to as the non-Federal sponsors (sponsors).

The flood damage reduction project is designed to address flooding issues caused by undersized twin 72-inch culverts through which the Muddy River flows from the Riverway to Avenue Louis Pasteur and the inability to convey flood waters efficiently in the riverine reaches of the Muddy River from immediately below Leverett Pond to Charlesgate.

The flood damage reduction portion of the plan previously reviewed called for the dredging of a flow conveyance channel starting at Leverett Pond downstream to the Riverway twin culverts. A new 10 foot by 16 foot culvert was to be installed to supplement the flow under the Riverway. Immediately downstream of the Riverway the Muddy River was to be day lighted in the area commonly referred to as the "old Sears parking lot" which is located across from the current Landmark Center. The Muddy River would be restored to open channel flow from the Riverway to Brookline Avenue. At Brookline Avenue the existing twin 72-inch culverts would be removed and a single 10 foot by 24 foot culvert constructed to pass the Muddy River under both Brookline Avenue and the Jug Handle Roadway. The area downstream of the Jug Handle Roadway would also be day lighted restoring the Muddy River to open channel flow to the Avenue Louis Pasteur culvert. Downstream of the Avenue Louis Pasteur culvert additional dredging would occur for the development of a flow conveyance channel to the Charlesgate area.

The Corps, which is designing the flood damage reduction project, has separated the design and implementation of the project into two phases. Phase 1 consists of the area between the Riverway and immediately upstream of Avenue Louis Pasteur and involves the two culverts and the day lighting areas. Phase 2 would consist of the dredging of the Muddy River flow conveyance channel from downstream of Leverett Pond to the Riverway and from downstream of Avenue Louis Pasteur to Charlesgate. The reason that the project was broken into two phases was to allow for the solicitation of two separate contractors that were specialist in the type of work to be performed. The Phase 1 work would be more appropriate for a general contractor specializing in vertical construction and Phase 2 work is more appropriate for a contractor specializing in environmental dredging.

(b) Description of material changes to the project as previously reviewed.

Changes from Culverts to Bridges - The flood damage reduction portion of the plan previously reviewed called for the installation of a 10 x 16 foot culvert under the Riverway to supplement the existing twin 72" culverts. It also called for the installation of a 10 x 24 foot culvert starting upstream of Brookline Avenue and running to downstream of the Jug Handle Road. The culverts would require approximately 1800 driven piles to provide the proper foundation support. The project design team reviewed an alternative proposal that would install concrete arch bridge sections in place of the culverts. In order to not reduce the hydraulic efficiencies that the culverts would have with a "concrete floor", a concrete floor would also be installed in the bridge arch sections. To the layman, the bridge arches with the concrete "floor" would appear to be concrete arched culverts. The difference is that the structures weight is supported by the bridge piers and therefore we can place caissons under the piers in lieu of pilings under the entire culvert structure for foundations support. Since the difference between culverts and bridges is really due to how the structure is supported, for the rest of this narrative we'll still use the term "culvert" when describing the structures to avoid confusion of the general public.

Elimination of Twin Culverts under Riverway - The flood damage reduction portion of the plan previously reviewed called for the installation of a 10 x 16 foot culvert under the Riverway to supplement the existing twin 72" culverts. The Project Design Team evaluated the elimination of the culverts in the final stages of construction (after they bypass water during the construction of a new culvert/bridge under the Riverway). The Riverway culvert would be increased in size to 10 x 24 feet to accommodate all of the flow that needs to be conveyed. Elimination of the existing culverts allows for better alignment of the "day lighted" section under the former Sears Rotary and reduces the maintenance requirements of the conveyance structures.

Brookline Avenue to the Jug Handle Road Culvert – The 10 foot by 24 foot culvert in the previously reviewed plan started immediately upstream of Brookline Avenue and continued to immediately downstream of the Jug Handle Road. This culvert will now be shortened so that it conveys the flow only under Brookline Avenue. The area between the downstream side of Brookline Avenue and the downstream side of the current Jug Handle Road will be day lighted. This will provide an additional 10,000 square feet of day lighted river and park area. Reducing the length of the culvert will also potentially improve upstream migration of anadromous fisheries since fish prefer lighted areas over darkened areas. The shorter culvert would minimize the length of fish passage in the darkened culvert sections.

Elimination of the Jug Handle Road – In shortening the Brookline Avenue to Jug Handle Road structure into two separate structures, the Project Design Team created additional open space and day lighting of the river. However, there is an increase in the head losses with the flow exiting one culvert (Brookline Avenue culvert) into an open channel and then being directed back into another culvert to go under the Jug Handle Road. This would require an increase in the size of the Jug Handle Road culvert to avoid an increase in river stage. As part of the Project Design Team's evaluation the Team also looked at the possibility of eliminating the Jug Handle Road. Removing this roadway would eliminate the need for a culvert under it and would allow for additional "day lighting" and open park space improving the environmental conditions in the river and returning a longer section of the river to

its historic appearance.

The Jug Handle Road was constructed to allow vehicles that were traveling on Brookline Avenue inbound or from the Riverway that wish to continue onto Park Drive toward Brookline to access Park Drive. Currently no left hand turn is allowed on Brookline Avenue/Park Drive intersection. Vehicles traveling on Brookline Avenue inbound turn onto the Jug Handle Road after the Fenway to make the turn onto Park Drive. Under current conditions, all vehicles traveling on the Riverway inbound must make a right turn at the end of the Riverway onto the Fenway (Road). In order to make the turn onto Park Drive, they too need to utilize the Jug Handle Road.

The Project Team formulated an alternative that would allow the elimination of the Jug Handle Road and improve traffic flow in the area. Past evaluations of the elimination of the Jug Handle Road have focused on the addition of a dedicated left turn lane on Brookline Avenue inbound for the left turn onto Park Drive. However, the volume of traffic that would make this turn originating from either Brookline Avenue (from the Medical center) or the Riverway would require two turning lanes to avoid a queuing problem. There is insufficient lane capacity to add two left turn lanes without impacting traffic flow in the area. The Project Design Team concluded that it would need to reduce the volume of traffic wishing to make left turns at Brookline Avenue onto Park Drive in order to not impact this intersection.

The team's concept involves the redesign of the Riverway/Fenway/Park Drive intersection to allow vehicles traveling inbound on Riverway to access Park Drive directly instead of traveling to the Brookline Avenue area. This would reduce the volume of traffic on Brookline Avenue that a single left turn lane on Brookline Avenue would suffice to handle the turns required.

Currently all traffic must turn right at the end of the Riverway onto the Fenway (see Figure 1 for the existing intersection layout). Traffic from the Riverway that wants to turn left onto Brookline Avenue or the Jug Handle Road must cross traffic that is coming from Park Drive that wishes to make a right turn on Brookline Avenue. This short merge area with no traffic control can cause delays and has the potential for accidents.

The revised Riverway intersection (see Figure 2) would allow vehicles traveling on the Riverway that wish to continue onto Park Drive to continue through a redesigned intersection with additional traffic control. This redesigned intersection would also eliminate the conflict between the Park Drive traffic traveling to Brookline Avenue outbound and traffic from the Riverway turning onto Brookline Avenue inbound since they will travel through the area under different traffic signal phases. The removal of the Riverway traffic from the Brookline Avenue/Park Drive intersection allows for the implementation of a left turn lane that can accommodate the desired left turns without impacting traffic flow. Traffic information was provided to both the Boston Transportation Department and the Department of Conservation and Recreation Traffic section who concurred with the Design Team's concept and assessment. The concept was also reviewed by the Boston Landmarks Commission and Massachusetts Historical Commission for compliance with historic preservation regulations.

The elimination of the Jug Handle Road will provide 18,500 additional square feet of open parkland. It will also rehabilitate the historic riverbank consistent with Olmsted's design of the park.

ATTACHMENTS & SIGNATURES

Attachments:

1. Secretary's most recent Certificate on this project
2. Plan showing most recent previously-reviewed proposed build condition
3. Plan showing currently proposed build condition
4. Original U.S.G.S. map or good quality color copy (8-1/2 x 11 inches or larger) indicating the project location and boundaries
5. List of all agencies and persons to whom the proponent circulated the NPC, in accordance with 301 CMR 11.10(7)

Signatures:

4/17/08 Antonia M. Pollak
Date Signature of Responsible Officer
or Proponent

4/15/08 Michael F. Keegan
Date Signature of person preparing
NPC (if different from above)

Antonia Pollak
Name (print or type)

Michael F. Keegan
Name (print or type)

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